A Gravitational Wave Pulsar Timing Backend for DSN Telescopes

Completed Technology Project (2012 - 2013)

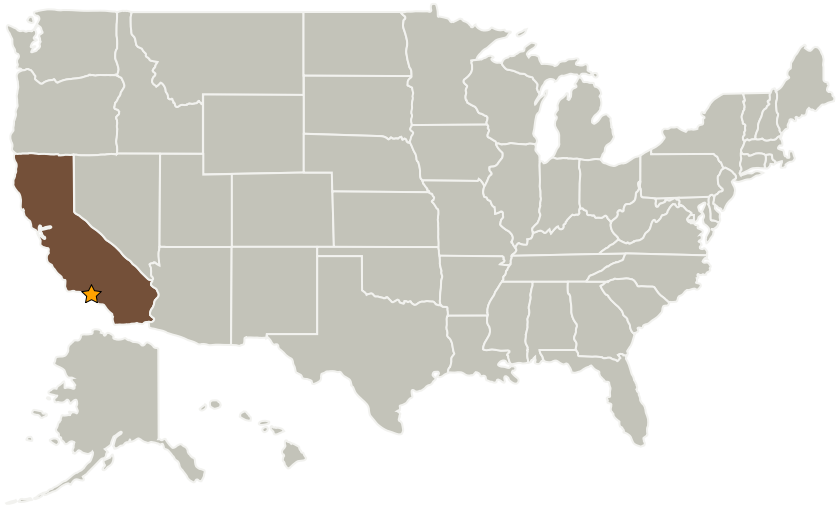
Project Introduction

Develop a state-of-the-art pulsar timing processor to be installed at the DSN to demonstrate precision pulsar timing capability along with a novel signal processing technique to remove the effects of the interstellar medium, thereby allowing us to reach the 100 nsec timing precision necessary for the detection of GW.

Anticipated Benefits

Missions will benefit from precision pulsar timing capability.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Jet Propulsion Laboratory(JPL)	Lead Organization	NASA Center	Pasadena, California

Primary U.S. Work Locations
California

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Organizational Responsibility

Responsible Mission Directorate:

Mission Support Directorate (MSD)

Lead Center / Facility:

Jet Propulsion Laboratory (JPL)

Responsible Program:

Center Independent Research & Development: JPL IRAD

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Project Management

Program Manager:

Fred Y Hadaegh

Project Manager:

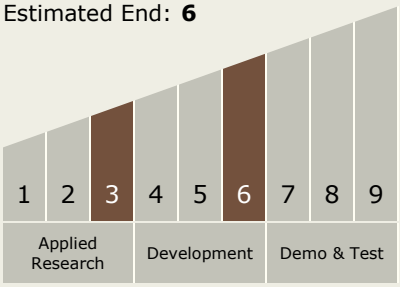
Jonas Zmuidzinas

Principal Investigator:

Walid A Majid

Technology Maturity (TRL)

Start: **3**
Estimated End: **6**



Technology Areas

Primary:

- TX12 Materials, Structures, Mechanical Systems, and Manufacturing
  - TX12.2 Structures
    - TX12.2.2 Design and Certification Methods